

IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEX SEV 14.0026X** issue No.: 1

Certificate history:
Issue No. 1 (2016-3-8)
Issue No. 0 (2015-2-16)

Status: **Current**

Date of Issue: **2016-03-08** Page 1 of 4

Applicant: **METTLER-TOLEDO GmbH**
Process Analytics
Im Hackacker 125
8902 Urdorf
Switzerland

Electrical Apparatus: **O2 Oxygen Sensor**
Optional accessory:

Type of Protection: **Intrinsic safety "ia"**

Marking: **Ex ia IIC T6/T5/T4/T3 Ga/Gb**
Ex ia IIIC T69 °C/T81 °C/T109 °C/T161 °C Da/Db

Approved for issue on behalf of the IECEx
Certification Body:

Martin Plüss

Position:

Manager Product Certification

Signature:
(for printed version)

Date:

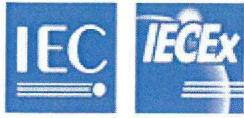
2016-03-08

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Electrosuisse div. Testing and Certification
Luppenstrasse 1
CH-8320 FEHRALTORF
Switzerland





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Manufacturer: **METTLER-TOLEDO GmbH**
Process Analytics
Im Hackacker 125
8902 Urdorf
Switzerland

Additional Manufacturing location
(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2014-10 Edition: 3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

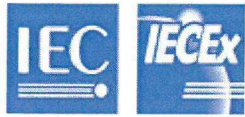
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

CH/SEV/ExTR14.0027/01

Quality Assessment Report:

CH/SEV/QAR12.0004/04



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

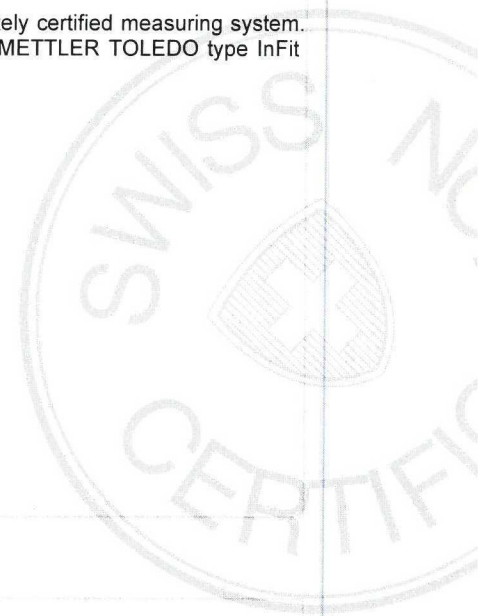
Intrinsically safe O2 Oxygen sensors type InPro6XXX are used for simultaneous measurement of O2 value and temperature, in industrial processes.

They are connected with a rugged connector to the intrinsically safe circuits of a separately certified measuring system. The mechanical protection of the equipment is ensured by an independent fitting from METTLER TOLEDO type InFit Type 76 * - *** or InTrac type 77 * - ***, or other appropriate fitting.

Additional Information see Annexe.

CONDITIONS OF CERTIFICATION: YES as shown below:

Additional Information see Annexe.





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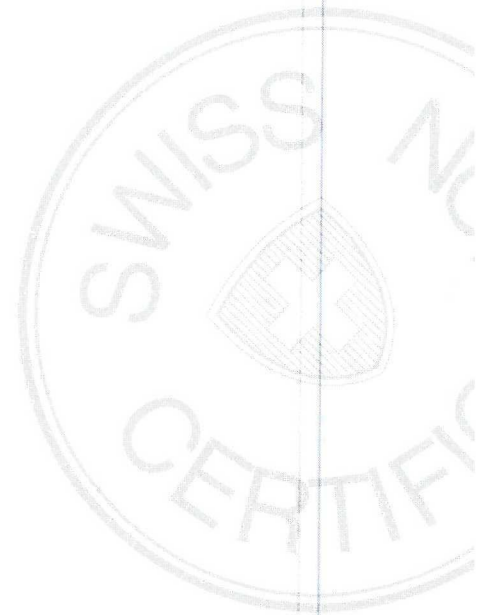
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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Change of the manufacturers address
Update of standards



Annexe to: IECEx SEV 14.0026X

Issue No.: 1
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Applicant Name: METTLER-TOLEDO GmbH

Electrical Apparatus: O2 Oxygen sensor

General product information:

Intrinsically safe O2 Oxygen sensors type InPro6XXX are used for simultaneous measurement of O2 value and temperature, in industrial processes.

They are connected with a rugged connector to the intrinsically safe circuits of a separately certified measuring system. The mechanical protection of the equipment is ensured by an independent fitting from METTLER TOLEDO type InFit Type 76 * - *** or InTrac type 77 * - ***, or other appropriate fitting.

Notes:

The O2 Oxygen sensor type InPro 6XXX was previously evaluated for category 1/2G protection intrinsic safety " Ex ia IIC" according to EN 60079:2006, EN 60079-11:2007, EN 60079-26:2007, and category 1/2D protection intrinsic safety " Ex iaD" according to EN 61241-0:2006 and 61241-11:2004, test report No. 01-IK-0267.01, extension 3, certificate SNCH 01 ATEX 3277X.

The digital version of O2 Oxygen sensor consists of digital sensors (type DsO2Mini4) which are integrated and encapsulated in connector K8S.

The digital sensors (type DsO2Mini4) was previously evaluated as Ex-Component for category 2G protection intrinsic safety " Ex ia IIC" according to EN 60079:2006, and EN 60079-11:2007, and category 2D protection intrinsic safety " Ex iaD" according to EN 61241-0:2006 and 61241-11:2006, test report No. 05-IK-0032.02.

The digital sensors (type DsO2Mini4) are integrated and encapsulated in connector K8S. Extremely small Ex-Component without marking as it is always only used together with devices of the manufacturer Mettler-Toledo.

The digital sensors type DsO2Mini4 have the following functions: Conditioning of analogue signal, digitization of measuring signals, diagnostic routines for determination of the remaining lifetime, maintenance and calibration intervals, communication with an evaluator, storage of relevant sensor data.

O2 ISM qualification Kit is a set of 5 different sensor plug-in heads, than can be used for the simulation of O2 Oxygen sensors, quick checks and loop trouble shooting

Ratings

Analog O2 Oxygen sensor
O2 measurement circuit, temperature
measurement circuit and
data chip circuits

With type of protection intrinsic safety Ex ia IIC.
Only for connection to certified intrinsically safe
circuits. Maximum values:

$$U_i \leq 16 \text{ V}$$

$$I_i \leq 190 \text{ mA}$$

$$P_i \leq 200 \text{ mW}$$

$$L_i = 0 \quad (\text{effective internal inductance})$$

$$C_i = 900 \text{ pF} \quad (\text{effective internal capacitance})$$

The values above apply, each as the sum of all the individual circuits of the associated intrinsically safe supply and evaluation unit (transmitter).

Digital O2 Oxygen sensor
Two-wire current circuit

With type of protection intrinsic safety Ex ia IIC.
Only for connection to certified intrinsically safe circuits. Maximum values:

$$\begin{aligned}U_i &\leq 16 \text{ V} \\I_i &\leq 30 \text{ mA} \\P_i &\leq 50 \text{ mW} \\L_i &= \text{negligible} \\C_i &= \text{negligible}\end{aligned}$$

Notes

1. According to Directive 94/9/EC (ATEX 95) Appendix I, the O2 Oxygen sensors type InPro6XXX is a devices of equipment group II, category 1/2G which, according to Directive 99/92/EC (ATEX 137) can be used in zones 0/1 or 1/2 or 1 or 2 as well as gas groups IIA, IIB and IIC, which are potentially explosive due to combustible substances in the temperature classes T3 to T6.

The requirements specified in EN 60079-14 must be observed during use / installation.

2. According to Directive 94/9/EC (ATEX 95) Appendix I, the O2 Oxygen sensors type InPro6XXX is a devices of equipment group II, category 1/2D which, according to Directive 99/92/EC (ATEX 137) can be used in zones 20/21 or 21/22 or 21 or 22, which are potentially explosive due to combustible dust.

The requirements specified in EN 60079-14 must be observed during use / installation.

3. For the analog version of the O2 Oxygen electrode, the O2 measurement circuit, temperature measurement circuit and data chip circuit are part of a common intrinsically safe system and are jointly connected to and operated by a separately certified transmitter.
4. The digital version of the O2 Oxygen sensor is connected to and operated by a two-wire cable to the certified transmitter.
5. The intrinsically safe circuits are galvanically isolated from the non-intrinsically safe circuits up to a nominal voltage peak value of 375 V and from the earthed parts up to up to a nominal voltage peak value of 30 V.

“Conditions of Use” for Ex Equipment or “Schedule of Limitations” for Ex Components, if any:

1. The relationship between the maximum permissible ambient or media temperature and temperature class, for category 1G applications, zone 0, is shown in the following table:

temperature class	maximum ambient or media temperature
T6	68 °C
T5	80 °C
T4	108 °C
T3	160 °C

2. The relationship between the maximum permissible ambient or media temperature and temperature class, for category 1D applications, zone 20, is shown in the following table:

temperature class	maximum ambient or media temperature
T69°C	68 °C
T81°C	80 °C
T109°C	108 °C
T161°C	160 °C

3. The capacitance and inductance of the connecting cable has to be considered.
4. The O2 Oxygen sensor type InPro 6XXX can be used in/with the fittings InFit 76* - *** or InTrac 7** - ***, or in/with other suitable fittings in potentially explosive areas.
5. The metal body of the O2 Oxygen sensors, or the fitting InFit76 * - *** or InTrac7 ** - ***, or other appropriate fitting is optionally included in the routine pressure test of the system.
6. The independent fitting used for installation of O2 Oxygen sensor must be conductively connected to the equipotential bonding system.